



RESEARCH PROGRAM ON
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Agriculture and
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The SmartAG Partner

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Message From The Program Coordinator

Dear Readers,

We are pleased to share with you our SmartAg Partner newsletter, highlighting policy engagement and ongoing research in the first quarter of 2017.

In Uganda, CCAFS and IITA partnered with the government to build the capacity of district stakeholders to implement the national climate change policy. Read more on how the local government is reinstating the coffee and cotton ordinance to address the impacts of climate change. In Kenya, CCAFS together with the Ministry of Agriculture, Livestock and Fisheries and the Directorate of Climate Change of the Ministry of Environment and Natural Resources held a meeting with climate change negotiators and partners from civil society and international organizations, to discuss progress made on the integration of agriculture in the United Nations Framework Convention on Climate Change (UNFCCC) negotiations and how this links to Kenya's national strategic priorities.

To celebrate international women's day, we share how four women farmers from the Nyando climate-smart villages (CSVs) in Kenya are improving their livelihoods through climate-smart agriculture. In Tanzania, read on to find out how CIP scientists and farmers in Lushoto are developing more resilient potato varieties that can grow in both long and short rainy seasons and give higher yields. In Uganda, CCAFS is working with local community-based organizations to build their capacity on improved agronomic practices and livestock management for increased productivity. Read more on the preliminary results emerging from Hoima CSVs. In Rwanda, farmers are turning to locally-tailored climate forecasts to help them make farming and investments decisions. Read more on how the Participatory Integrated Climate Services for Agriculture (PICSA) approach is building on "Twigire Muhinzi" — a local farmer-to-farmer extension service model to disseminate climate information.

A recently published book on 'Climate Change Adaptation in Africa: Fostering Resilience and Capacity to Adapt' shares examples of good practices on climate change adaptation in Africa, including from Nyando CSVs. In Rwanda, a working paper on climate services for agriculture presents a baseline assessment of the state of climate services among agricultural households.



Dr. Maren Radeny

Regional Program Leader

We are pleased to welcome Dr. Dawit Solomon, the new Regional Program Leader for CCAFS East Africa. Dr. Solomon holds a PhD in Geoecology/Soil Sciences from the University of Bayreuth in Germany and a parallel post-doctoral training in biogeochemistry, biogeochemical cycling, environmental sciences and sustainable agriculture, from the University of Bayreuth and Cornell University in the USA. He has over 20 years of experience in capacity building, research, international project development, implementation and engagement experience in sustainable agriculture, integrated environment and ecosystem rehabilitation and management, food and nutrition security, climate-change mitigation, adaptation and resilience. He has worked with diverse partners and stakeholders including farmers, government policy makers and international development partners in Africa, Europe, South and North America. Before joining CCAFS, he was a Senior Research Associate and a Research Fellow at Atkinson Center for Sustainable Future, Cornell University.



1

From local to global: engaging policymakers to advance climate-smart agriculture in Africa

Scientific evidence to support climate change, agriculture and food security policies and strategies in East Africa.

By Lili Szilagyi

Agricultural systems in East Africa are highly vulnerable to climate change and variability. The frequency and severity of climate shocks such as drought, floods, heat and cold stress have increased with negative impacts on agriculture and food security. At the same time, agriculture significantly contributes to economic growth, food security, and employment in Africa.

African countries recognize the importance of the agricultural sector; for example, many African countries are implementing policies and strategies for climate change adaptation and mitigation in agriculture at national and local levels. In order to develop and implement successful climate change policies, policymakers need scientific evidence.

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) East Africa has been working with policymakers for many years to identify suitable policy and institutional frameworks that support evidence-based policy and program development. A new info note, titled *Integrating climate change in agriculture and food security policies and strategies*, gives an overview of how CCAFS East Africa informs policymaking that tackles climate change from local initiatives to global policies.

For example, at the local level, CCAFS is working with communities and policymakers to develop local adaptation plans of action (LAPAs) and to integrate climate change and agriculture issues in local level policy documents. Through LAPAs, communities and policymakers are actively involved in understanding their changing and future climatic conditions and to engage effectively in the process of developing adaptation priorities specific to their environment.

At the national level, different approaches have been used to engage with policymakers, all of which are linked to and build on each other. For example, CCAFS organized a series of workshops in the four countries (Kenya, Uganda, Tanzania and Ethiopia) in collaboration with government partners, to identify priorities for research on agriculture and climate change.

At the regional level, CCAFS science informed the development of the CSA Framework Programs (CSA-FPs), which aim to support countries to synergize their National Agricultural Investment Plans (NAIPs) and agricultural sector programs with national climate change strategies and action plans in order to ensure a common and holistic approach.

And finally, at the global level, CCAFS and partners worked with the African Group of Negotiators (AGN) to prepare their submissions to subsequent SBSTA sessions, where CGIAR



COP21 side event on the national climate-smart agriculture programmes in East Africa, co-hosted by CCAFS.

and other science partners knowledge outputs were used to provide evidence to the AGN to articulate the need to include agriculture into the global climate change policy discussions.

The partnership engagement approach CCAFS has adopted across all scales of providing scientific evidence to policymakers should be pursued with vigor to ensure that policies on climate change and agriculture developed and implemented in Africa are not only relevant but effective based on meeting the needs and priorities of the continent.

Read more:

News update: Recent achievements and persistent challenges to gender-responsible policymaking in East Africa <http://bit.ly/2qgEAEG>

Blog: Constructing Africa's narrative on agriculture and gender in global climate change discussions <http://bit.ly/2r1i3eo>

Blog: Climate change bill signed into law in Kenya <http://bit.ly/2qo7e2b>

Blog: More action, less talk: African negotiators call for investments in agricultural transformation <http://bit.ly/2qo9Woc>

Blog: Post-COP22 roadmap: Kenyan stakeholders explore implementation of the Paris Agreement <http://bit.ly/2qTzpJN>

News update: Informing policies with evidence: gender, climate change, and food security in Uganda <http://bit.ly/2qkucYE>

News update: Mainstreaming climate-smart agriculture at the sub-national level in Ghana <http://bit.ly/2rV25Az>

Lili Szilagyi is Communications Consultant for the CCAFS Coordinating Unit and for CCAFS East Africa.

2

Linking national action to global processes: setting the agriculture agenda for Kenya

Recognition of solutions that integrate mitigation and adaptation opportunities, such as climate-smart agriculture will adequately move Kenya towards a low carbon development pathway.

By Catherine Mungai, Mary Nyasimi and Maren Radeny

Agriculture has been discussed at the United Nations Framework Convention on Climate Change (UNFCCC) for a long time. However, in the absence of a decision, agriculture will be dealt with under different avenues within the UNFCCC going forward, including the Nairobi Work Programme of 2005, the Cancun Adaptation Framework of 2010, finance mechanism, gender, and the technology mechanism. Reflecting on the future of agriculture in the UNFCCC, a blog story by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) emphasizes the need for continued country level actions despite lack of agreement on agriculture at global level.

Kenya's climate change policy landscape

Kenya ratified the Paris Agreement of 2015 on 28 December 2017 and is now putting the Nationally Determined Contributions (NDCs) into action. Kenya's NDC was submitted in July 2015, and identifies climate-smart agriculture (CSA) as a critical sector for mitigation as the country seeks to reduce greenhouse gas emission by 30% by 2030 and achieve a low carbon, climate-resilient development pathway. Consequently, the CCAFS East Africa program, in collaboration with the Ministry of Agriculture, Livestock and Fisheries

(MOALF) and the Directorate of Climate Change at the Ministry of Environment and Natural Resources, organized a one-day workshop on 13 January 2017 that brought together a group of Kenyan climate change negotiators and partners from civil society and international organizations, following the "Issues related to agriculture" in the UNFCCC negotiations, to discuss progress made on the integration of agriculture in UNFCCC negotiations and how this links to Kenya's national strategic priorities such as Kenya Vision 2030, the National Climate Change Response Strategy (2010) and the National Climate Change Action Plan 2013- 2017.

In spite of many discussions, side events and lobbying initiatives during various UNFCCC meetings over the years, no decision that would have supported climate actions and policy directions on agriculture has been achieved. This has been very disappointing for Kenya, other African countries and the developing countries who have been continuously pushing for inclusion of agriculture in various negotiation streams and programs such as Reducing Emissions from Deforestation and Forest Degradation (REDD+), and the Clean Development Mechanism (CDM). With no decision on agriculture, developing countries whose economies are driven by agriculture were left with no modalities and mechanisms to seek for climate financing to support their threatened foods systems under the changing climate.



T. Muchaba (CCAFS)

Kenya is now focused on making its agriculture and food systems more climate-resilient. With no decision reached on agriculture at UNFCCC, developing countries were left with no mechanisms to seek for climate finance.

Linking agriculture and climate change policies

Kenya is now focused on making its agriculture and food systems more climate-resilient. Speaking on the country's climate change policy landscape, Stephen King'uyu from the Climate Change Directorate pointed out that Kenya's Climate Change Act (CCA), 2016 was legislated in May 2017. The Act provides the legal background against which climate change issues should be integrated across sectors, including agriculture. In response, the climate change unit at MOALF is in the process of developing specific policies and strategies to address climate change in the agricultural sector.

“The draft Agriculture policy has mainstreamed issues on climate change resilience, adaptation and mitigation,” said Lucy Ng'ang'a from the climate change unit at the state department of agriculture. “Furthermore, with support from the World Bank, the draft country climate-smart agriculture strategy intended to implement Kenya's NDCs is undergoing county stakeholder consultation and is due for national validation and launch by March 2017,” Ms. Nganga added.

Recognition of solutions that integrate mitigation and adaptation opportunities, such as climate-smart agriculture (CSA) will adequately move Kenya towards a low carbon development pathway. CSA technologies and practices will maximize food security benefits and contribute to reducing GHG emissions from agriculture sector. Opportunities for improving agricultural production in a changing climate include:

- Use of information technology in the agriculture sector e.g. using mobile phones to manage irrigation, receive weather information and agro advisory services;
- Research on crop and livestock breeding and genetic improvements;
- Developing insurance packages and management of climate information and delivery mechanisms; and
- Livelihood diversification and agro-processing technologies.

Speaking on behalf of CCAFS East Africa, John Recha emphasized that research institutions will continue to work with policymakers to provide scientific knowledge outputs to inform policy development and implementation. Dr. Recha

noted that there is robust agricultural research evidence in Kenya from national and international agricultural institutions that policymakers can tap into as they prepare policies and other strategies. Participants reported that accessing the knowledge products and limited capacity of policymakers to use the research evidence are some of the problems that hinder policymakers from making evidence-based policies.

Way forward

The meeting agreed on the following actions:

- Revise Kenya's position on agriculture, which will be shared with African agriculture negotiators during the African Group of Negotiators meeting tentatively scheduled for March in Nairobi;
- Identify other UNFCCC bodies through which issues of agriculture can be discussed such as technology transfer, capacity building and gender; and
- Develop a national gender and youth strategy for implementing the climate change act.

Read more:

Info Note: Integrating climate change in agriculture and food security policies and strategies: Experiences and lessons from East Africa <http://bit.ly/2lluSve>

CCAFS news update: From local to global: Engaging policymakers to advance climate-smart agriculture in Africa <http://bit.ly/2qgCnsQ>

CCAFS blog: Post-COP22 roadmap: Kenyan stakeholders explore implementation of the Paris Agreement <http://bit.ly/2qTub0C>

Catherine Mungai is the Partnerships and Policy Specialist at CCAFS East Africa. Maren Radeny is the Program Coordinator at CCAFS East Africa. Mary Nyasimi is the Science Officer of the CCAFS Gender and Social Inclusion Flagship.

Stakeholders in Mt. Elgon region agree to use local legislation to improve coffee quality

Multi-stakeholder platform in Uganda works to revitalize a previous coffee ordinance

By John Francis Okiror

The quest for innovative solutions to complex agricultural problems has been a major theme of agricultural research for development, leading to a shift from technology-oriented approaches to systems-oriented solutions, and more recently to innovation approaches.

The evolution of these approaches parallels the evolution of development interventions in general from a top-down approach to a participatory one. The Transfer of Technology approach reflects the top-down transfer of research knowledge and technologies by extension staff to farmers, while the Farming Systems approach focuses on socio-cultural, economic, and agro-ecological drivers that influence performance of agricultural innovation at the level of the individual field, farm, or collection of farms. But these approaches retain power in the hands of scientists who obtain information from farmers to identify what might be good for them. The Agricultural Innovations Systems approach emphasizes the institutional and political dimensions of change processes and considers innovation as a process that is shaped by interactions between actors and institutions inside and outside the agriculture sector.

Beyond the different dimensions (i.e. biophysical, technical, socio-cultural, economic, institutional and, political), agricultural problems are entangled in interactions across

different levels (international, national and subnational), and involve multiple stakeholders, including researchers, farmers, policy makers, private sector and civil society. The approach of working together to find solutions to complex agricultural problems such as impacts of climate change on food security has been given various names that include innovation platforms, multi-stakeholder platforms, learning alliances, social learning, or self-help groups.

Learning alliances are increasingly seen as a promising vehicle for agriculture innovation and development. Since 2014, the CCAFS-funded Policy Action for Climate Change Adaptation (PACCA) project has assisted in the establishment of learning alliances in Uganda and Tanzania, with the goal of influencing and linking policies and institutions from national to local level for the development and adoption of climate resilient food systems in East Africa. Learning alliances have catalyzed collective cycles of learning, action and reflection around climate change impacts and policy related issues, in addition to being at the heart of strengthening relationships between key stakeholders where the project is implemented.

The Uganda Ministry of Water and Environment through its Climate Change Department has partnered with PACCA to build not only capacity of district stakeholders on the National Climate Change Policy (2012) but also proactively engage them on the process of drafting the Climate Change



E. Kemigisha

Growers harvesting coffee berries in Luweero, Uganda.

Bill, with the aim of making the process all-inclusive and adapting the policy to local contexts using district ordinances and sub-county bylaws.

Mbale District Local Government, through the district learning alliance, prioritized reinstating the Coffee and Cotton Ordinance (1998) during a two-day learning alliance planning meeting that took place at the District Council Hall on 29 – 30 March 2017. This event was organized with support from the PACCA project in partnership with USAID, Family Health International, and Uganda’s National Agricultural Research Organization.

“The ordinance is necessary in my view as a technical person because it will address the constraints of the coffee industry,”

said Julius Ayo, the district agricultural officer, while presenting the achievements and challenges of the ordinance that was suspended after only two years of implementation. Stakeholders in the region agreed to use the ordinance to address the impacts of climate change, rampant pests and diseases, and quality of coffee, but there was need to further consult key stakeholders at community, sub-county

and district levels to get their position, and to set up a review committee as well as a sectoral committee to draft the revised coffee ordinance before it is sent to the District Council for approval.

“What council is interested in is that the ordinance will work this time and the existing gaps that led to its suspension are addressed,” said the Deputy Speaker, Rose Nafuna, adding that it is important to secure farmers with a guiding framework.

During the coming months, stakeholders from the Mbale Learning Alliance will work on revitalizing the Coffee Ordinance by involving key stakeholders within the districts of Mt. Elgon region to pass similar ordinances that not only address the impacts of climate change but also the quality of coffee beans as well as pests and diseases.

John Francis Okiror works in the communications team at the International Institute for Tropical Agriculture. He supports communications for the IITA-led PACCA project.

What is the issue with gender budgeting?

Perspectives from local government practitioners on creating budgets to eliminate disparity and promote gender equality.

By John Francis Okiror

“Gender equity and budgeting is a requirement for all sectors and local governments,” said Joel Atim, senior inspector with the Ministry of Local Government, while presenting at the gender budgeting feedback workshop in Nwoya district of Uganda on 23 February 2017. He explained that gender budgeting focuses not only on eliminating gender disparities in all sectors of government and ending all forms of discrimination against women but also promotes gender equality and women’s empowerment in the development process.

To highlight the importance of gender relations and equality in sectors such as agriculture, natural resources, education and health, gender and development practitioners have argued that expecting a country to develop with half of its population unable to fully participate in the process is like asking someone to work with one arm and leg tied behind his/her back.

Gender budgeting has become a recognized approach to use fiscal policy and administration to address gender inequality and promote women’s advancement. According to the International Monetary Fund (IMF) survey of gender budgeting efforts in sub-Saharan Africa, Uganda and Rwanda have achieved notable success in their efforts to integrate gender-oriented goals into budget policies, programs and processes. This success is attributed not only to leadership by the Ministry of Finance but also non-governmental organizations and parliament that play an essential role in gender budgeting advocacy.

Focus on Uganda

Uganda has undertaken a number of initiatives to promote gender equality. The Constitution of the Republic of Uganda (1995) provides a framework that promotes equal consideration of women and men in government programs, the National Gender Policy (1997, revised in 2007) provides for mainstreaming gender in the development process, and gender budgeting guidelines from the Ministry of Local Government facilitate planning and budgeting processes at the local government level. However, the challenge remains to transform policy objectives into practice.

Gender Budgeting Feedback workshops were conducted in February 2017 in Luweero, Rakai and Nwoya districts in Uganda to give feedback and validate findings of the gender budget analysis conducted by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) through its Policy Action for Climate Change Adaptation (PACCA) project. The study analyzed four district and twelve sub-county budgets for four financial years (2012/13 to 2015/16), with specific reference to the agriculture and natural resource sectors.

While presenting the research findings, Mariola Acosta, a research fellow at the International Institute of Tropical Agriculture (IITA), told district and sub-county officials in Nwoya that gender activities are allocated an average actual budget of 0.09 percent and 0.43 percent of the total annual budget for the district and sub-county respectively.



J. F. Okiror (ITA)

District officers in Uganda discuss steps toward better gender responsive budgeting.

In comparison to other districts in the study, Nwoya has consistently higher actual budgets than estimated budgets, with an average actual budget at 0.06 percent and the average estimate budget for gender at 0.013 percent. “Nwoya findings are contrary to all the districts. We would like to know why Nwoya received more budget allocation than estimated between 2012 and 2015,” Acosta said.

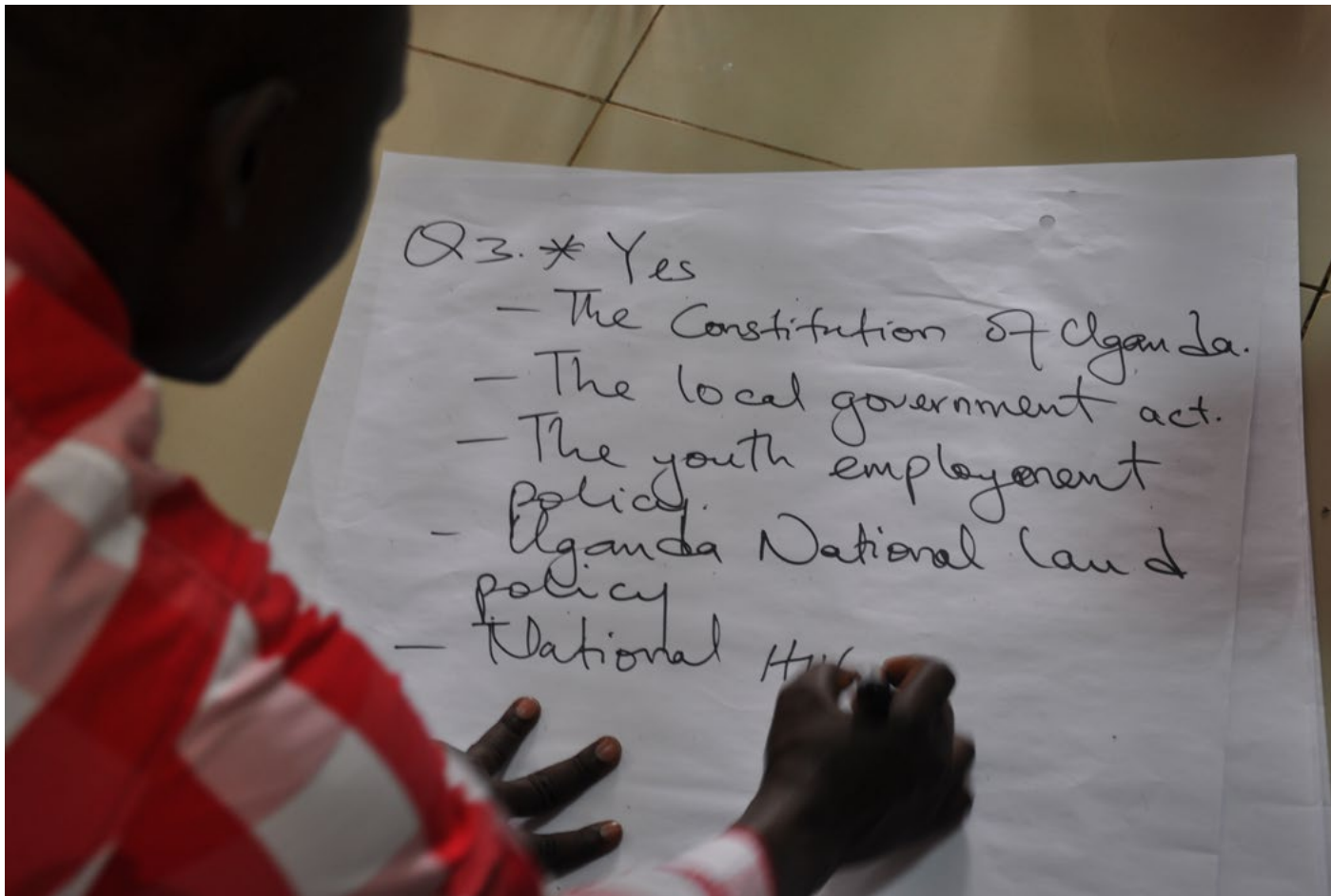
“It is fine to budget less and spend more but the issue is execution,” said Francis Opira, district planner. “In the course of the year when we receive more money [from other sources including development partners] we also give more money to gender issues.” He explained that Nwoya Local Government is addressing gender issues indirectly, citing the examples of a borehole that benefits women and children who fetch water, and a road that benefits men who take produce to the markets.

Feedback workshops have been conducted with members of the Parliamentary Forum on Climate Change and Food

Security, national level climate change stakeholders, and ten local governments, including the four target districts where the CCAFS-PACCA initiative is operating.

Overall, the study indicated that local governments allocated low budgets to gender-specific activities; districts allocated an average of 0.09 percent while sub-counties allocated 0.43 percent of their agriculture and natural resource budgets to gender-specific activities. The gender-specific activity allocations fluctuated considerably from one financial year to another, and there were consistent and striking differences between gender budget estimates and actual allocations.

Local government officials explained that budget cuts, demand driven budgets, limited resources, conditional grants, the cross-cutting nature of gender-related activities, and a lack of adequate knowledge on gender issues are responsible for the variable and low estimated and actual budgets at the district and sub-counties.



J. F. Okiror (IITA)

Gender budgeting has become a recognized approach to address gender inequality and promote women advancement. Uganda has undertaken a number of initiatives to promote gender equality.

Opportunities for improvement

Despite the gender budgeting gaps, there are great opportunities to improve. The central government has provided guidelines for gender mainstreaming and budgeting such as the Local Government Gender Mainstreaming Guidelines, Local Government Act (1997), Equal Opportunities Commission Act (2007), and the National Gender Policy (2007). Discussions by local governments revealed that there are actions they could take on immediately to address gender budgeting and allocation gaps. These include lobbying for funds, allocating part of local revenue to the gender budget, using a bottom-up approach in planning, and awareness creation and gender mainstreaming in all sectors at district and sub-county levels.

Moving forward, PACCA plans to build on the information shared in these feedback workshops and continue supporting district officers in Uganda to transition towards more responsible gender budgeting in climate change policy formulation, which would not only involve an increase in budget allocated to gender issues but also a diversification of the gender activities planned by the districts.

Read more:

Towards gender responsive policy formulation and budgeting in the agricultural sector: Opportunities and challenges in Uganda <http://bit.ly/2r0aL8H>

Gender and Climate Change in Uganda: Effects of Policy and Institutional Frameworks <http://bit.ly/2rZCs0B>

John Francis Okiror is a communications officer with the PACCA project at IITA.

5

Are these the climate-smart potatoes?

Ensuring food security and increased income for smallholder farmers through heat tolerant and adapted potato clones.

By Tabitha Muchaba

Situated in the Northeast of the country, the district of Lushoto is part of the so called highlands of Tanzania where potatoes are traditionally grown. Due to heat and lack of resilient potato varieties, farmers would lose all the crop especially when they grow the local variety called Kidinya which is extremely susceptible to Late Blight disease. To address these issues, the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), initiated a study aimed at developing more resilient potato varieties that can grow in both long and short rainy seasons and give higher yields. The study, initiated in 2013, was led by the International Potato Center (CIP) in partnership with Selian Agricultural Research Institute (SARI), Lushoto District Agriculture, Irrigation and Livestock Cooperatives Office (DAICO), YARA Tanzania Limited, Japan International Cooperation Agency (JICA), local Non-Governmental Organizations (NGOs) and Lushoto farmers.

Based on demand by Lushoto farmers, this participatory action research (PAR) also sought to develop potato varieties with better culinary traits. The trials were carried out in five villages: Kwesine, Boheloi, Maringo, Kwekitui and Milungui with experimental materials comprising of six advanced and heat tolerant clones from CIP. The data collected from three seasons of field evaluations showed a certain consistency in the high yielding ability of four genotypes: Asante, Shangii, CIP392797.22 and CIP398208.29. Two clones were named through a stepwise and participatory approach and proposed for official release. Findings are presented in a recently published working paper entitled *Participatory Evaluation of Resilient Potato Varieties in Climate-Smart Villages of Lushoto in Tanzania*.



Christine Bukania (CIP-SSA)

Thanks to resistant potato varieties, Late Blight disease is no longer a serious threat to these farmers.

Read more:

Blog: In pictures: tenfold potato yield in Lushoto, Tanzania <http://bit.ly/2rURmGp>

Blog: Improving potato yields for farmers in the Usambara Highlands <http://bit.ly/2qk5ZSt>

Blog: Potato farmers in Lushoto say 'Asante' <http://bit.ly/2qocD99>

Info Note: Climate-smart villages and progress in achieving household food security in Lushoto, Tanzania <http://bit.ly/1rtLmDB>
Workshop Report: Stakeholder Participatory Workshops in Lushoto, Tanzania: Climate Smart Agriculture Practices <http://bit.ly/2r14TOR>

Tabitha Muchaba is a Research Assistant at CCAFS East Africa. This news update was edited by Dieudonne Harahagazwe (CIP), Vivian Atakos (CIP) and Catherine Mungai (CCAFS East Africa).

Celebrating women farmers in Nyando: transforming lives through climate-smart agriculture

Empowering farmers: four inspiring stories of Nyando women bringing about change

By Tabitha Muchaba, Caroline Odera, Maren Radeny and Catherine Mungai

Today is International Women's Day, and the campaign theme is #BeBoldForChange, forging a more inclusive gender equal world.

Empower a woman, empower nations, so goes the common saying.

Nyando, a conservative society, is a rich agricultural flood plain around Lake Victoria in Western Kenya. Most households in Nyando are headed by women and food insecurity is a major challenge. As of 2011, 81% of the families experience 1-2 hunger months in a year, while 17% of the families experience 3-4 hunger months; a period when they are unable to produce from their own farm source. During the dry season, rivers in Nyando often run dry, requiring women to walk long distances for water.

Since 2011, the CGIAR Research Program on Climate Change, Agriculture and Food Security East Africa (CAAFS EA) has been training women farmers on sustainable agricultural practices and climate-smart interventions. There are three active community-based organizations (CBOs) - Friends of Katuk Odeyo (FOKO), NECODEP, KAPSOKALE. These CBOs cover 106 villages in Nyando, and more than 70% of the active members are women. As a result of the trainings, there have been several changes in the community and these include women

starting small businesses, earning an income and making enough money to send their children to secondary education, something that was not happening before the targeted capacity building initiatives and empowerment.

To celebrate the International Women's day, we highlight stories of four women farmers who are making a difference in their communities and inspiring other women.

1. Mercyline Atieno – Poultry farmer benefiting from innovations funds



T. Muchaba (CCAFS)

Mercyline Atieno, a poultry farmer in Nyando shares on how she has benefited from the innovation funds initiative. Since 2015, she joined the NECODEP CBO and borrowed money from the innovation funds to start her poultry business. She has always wanted to be self-employed, and her dream came true – she has increased the number of poultry owned and sold over 200 chickens.



T. Muchaba (CCAFS)

“I needed to improve the housing for the chicken and only had a few building materials. I got a loan from the NECODEP through the innovation fund and I was able to build a house. I started with ten chickens, I took my eggs to the hatchery and currently I have more than 50 chickens and I have sold more than 200”.

With just an investment of KES 10,000 (USD 100), Mercyline now sells eggs and chicken to her neighbors and gets a profit of about USD 100 a month. Sometimes she faces challenges like drought and Newcastle disease, but that has not been a reason for her to stop doing her business.

The community innovation funds have helped women farmers access loans at affordable interest rates to invest in new crops, improved crops varieties and livestock enterprises. When the program started, 17 groups in Nyando with membership from 306 households were operational and have been able to save nearly USD 69,500. Borrowing from the facility has reached 90% and most household use the loans to purchase food, procure farm inputs, pay school fees and set up small businesses.

Mercyline now works at the community hatchery, where she grades eggs and monitors them till they hatch.

2. Catherine Akinyi – Obinju Smart Farm

Catherine is the chairwoman of Obinju Smart Farm Group. The smart farm comprises of a greenhouse - which is free from flooding and drought, and is used for seed bulking of fodder for livestock, and growing horticultural crops. The smart farm also has two water pans with a total capacity of over 250,000 litres having over 1,000 tilapia fish. The group is also involved in producing sorghum, maize and bee keeping.



T. Muchaba (CCAFS)

“Since we started this smart farm, we have never lacked food. We always have vegetables to sell and food to eat in our homes.”

The group started more than 5 years ago as a women’s group, and used to plant trees. With the help of CCAFS, they now grow improved varieties of crops. After men saw how successful the women were, they joined the group.



T. Muchaba (CCAFS)

The women save profit from selling their produce in a group bank, locally known as ‘table banking’. At the end of each month, they divide the profit among themselves, each member can get up to KES 25,000 (USD 250).

“I used to find it very hard to ask for money from my husband before, but I now have money. I can now convince my husband to do farming as he can also see the good returns.”

The farm serves as a demonstration site for women groups to engage in climate-smart agriculture.

3. Dorothy Achieng – Small Ruminants Livestock Farming



“I am a happy woman,” says Dorothy, “my life changed since I started keeping sheep and goats”.

Dorothy Achieng is married to Joshua Omolo, NECODEP CBO chairman. She has been practicing livestock keeping for two years now and has a total of seven goats and eight sheep.

“I sell the sheep and goats to local farmers in Nyando. I also sell goat milk and I can now easily pay school fees for my children.”

Being less labor intensive, Dorothy is able to take care of the livestock as well as manage other household responsibilities. The improved breed of sheep and goats grow very fast, and fetch higher market prices of upto KES 5,000 (USD 50).



“The milk is very nutritious. Am I not healthy?” she asks.

Women have full control over the small ruminants which they can sell without seeking authority from the husbands unlike cows which can only be sold by men. CCAFS has been collaborating with World Neighbors, Vi Agroforestry and Kenya’s Ministry of Livestock Development to work with farmers to improve productivity of small ruminants (sheep and goats). Overall, about 120 households in Nyando are now benefiting from interventions on small livestock. Of these households, 70% are headed by women.

Dorothy is encouraging fellow women to get into small ruminant livestock production as it is not labor intensive and the production cost is low. She would love to teach other women about it.



4. Pauline Omondi – Water Harvesting

Pauline Omondi has four water pans and also practices soil conservation. The water pans have a capacity of more than 84,000 litres that meet her water needs during the dry season.



V. Atakos (CCAFS)

“The water pans are everything, I have irrigated my farm and used it for my household’s chores. I can do everything I want to do in the farm.”

Pauline has also constructed terraces to control soil and water movement on her farm. On the terrace, she has planted fruit trees which has increased her annual income. She also keeps and sells mad fish after every three months.

“I am not scared as my family will never lack food.”



T. Muchaba (CCAFS)

“Most women in the area give up after the water pan has dried. During droughts and dry season, I divert water from the river to the water pans.”

Pauline advises that women should be trained on how to use and depend on water pan. “Despite the challenges, I have persisted in farming and increased my harvest every year.”

Partners working in the Nyando Climate-Smart Villages include Kenya Agricultural and Livestock Research Organization (KALRO), the Ministry of Agriculture, Livestock and Fisheries (MALF), Magos Farm Enterprises, Maseno University, County Government of Kisumu, Vi Agroforestry and Thin Qubator Aquaculture.

Read more:

Blog: Empowering women farmers to feed the world <http://bit.ly/2qkuoqE>

Blog: Gender, power and climate information in Nyando, Kenya <http://bit.ly/2qoujBK>

Blog: Improving the adaptive capacity of women farmers in Western Kenya <http://bit.ly/2qkqQVA>

Tabitha Muchaba, Maren Radeny and Catherine Mungai work at CCAFS East Africa. Caroline Odera is a consultant working with women in Nyando Climate Smart Village.

Initiatives to increase food security and climate resilience of farmers in Uganda

Preliminary results from climate change adaptation and mitigation initiatives in Hoima, Uganda

By Lili Szilagyi

Hoima in western Uganda is located to the east of Lake Albert. The site is a productive region and diverse in crop production, but it has been challenged by land degradation and declining soil fertility. Due to soil erosion, rising temperatures and increasing rainfall variability, farmers in the region have been exposed to declining food security.

The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) and partners have been implementing climate change adaptation and mitigation practices to increase farmers' food security. A recently published info note highlights some of the initiatives and preliminary results to shed light on the progress in achieving household food security in Hoima.

Collective action for climate change adaptation

CCAFS and one of Uganda's agricultural research and development institutes (Bulindi ZARDI) work with two local community-based organizations (CBOs) to build their capacity; CBOs were trained on improve agronomic practices and livestock management to improve productivity.

Since 2014, CBOs have expanded their membership from 140 to 1670 households, and 60% of the CBOs' members are women. CBOs have mobilized USD 50,000 in a community innovation fund, and due to flexible repayment terms and affordable interest rates, their members can borrow from the fund for investing in agricultural activities.

Climate information services for improved on-farm decision-making

Farmers in Hoima used to rely on indigenous knowledge for weather forecast. This changed in 2012, when Bulindi ZARDI partnerd with farmers to integrate scientific forecasts for better on-farm decision making.

As a result, CBO members have access to weather information through mobile phones, with over 620 households using climate information services to increase their ability to manage climate risks.

Improved crop varieties for increasing food security

Diversifying crop choices, including improved crop varieties, improves climate risk management and ensures that households' nutrition needs are met. This is why it is a big success that by 2016, over 90% of the households in Hoima introduced at least one new crop variety. For example, by the end of 2016, over 1200 households have planted improved sweet potato and cassava varieties that were developed through partnerships; the sweet potato with the International Potato Center (CIP), and the cassava with International Institute for Tropical Agriculture (IITA).

CBOs have been instrumental in advancing the scaling out of these varieties to more farmers in neighboring villages. They have promoted the uptake of these varieties through village demonstrations, field days and multiplication of planting material.



J. Rechta (CCAFS)

Father and son taking rainfall records from a rain gauge on their farm in Hoima, Uganda. Climate information services is among initiatives that help farmers cope with climate change.

Agroforestry for soil conservation and improved nutrition

Farmers in Hoima are now planting fruit trees such as mango varieties that produce bigger, more delicious fruits. Improved mango trees produce 1000-1500 fruits compared to the local variety that yields about 250 mangoes annually.

Bulindi ZARDI scientists help train 40 farmers in 2013 on how to manage the fruit trees, and on other land management practices.

These initiatives are good examples to highlight how climate-smart practices increase farmers' climate resilience, and they also show the importance of partnerships between CCAFS and like-minded organizations to avail and promote evidence-based solutions for climate change adaptation and mitigation.

Lili Szilagyi is Communications Consultant for the CCAFS Coordinating Unit and CCAFS East Africa.

Collective action for climate change adaptation and mitigation in Kenya

Farmers in Wote Climate-Smart Villages are engaged in testing climate-smart technologies to cope with climate risks.

By Lili Szilagyi

Wote in eastern Kenya has been highly affected by climate change. In the last 50 years, the region has been experiencing increasing temperatures, low and variable rainfall, and poor soil fertility, all contributing to low crop productivity. Water harvesting innovations for crop and livestock production.

In 2012, the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) took action to create awareness about local climate risks to inform farming decisions, and contribute towards efforts to reduce hunger and malnutrition and improve household incomes and food security. CCAFS initiated partnerships between farmers, research organizations and policymakers to scale up and scale out the appropriate climate adaptation options.

A recently published CCAFS info note, titled *Building adaptive capacity and improving food security in semi-arid Eastern Kenya*, gives an overview of preliminary results from climate change adaptation and mitigation initiatives in the Wote Climate-Smart Villages. Through examples of climate-smart practices, such as soil and water management, the info note shows how partnerships build adaptive capacity and improve food security in the region.

How do CBOs influence farmers' climate adaptation strategies?

Community-Based Organizations (CBOs) are key in improving

farmers' food security in the region. In 2014, farmers joined two CBOs that not only pool financial resources to farmers, but they also channel information on climate-smart agriculture technologies. The International Crops Research Institute for Semi-Arid Tropics (ICRISAT) in partnership with the Kenya Agricultural and Livestock Research Organization (KALRO), and Makueni County Department of Agriculture and Livestock train members of the CBOs on use of improved agronomic practices.

The info note describes three initiatives where CBOs are instrumental in informing farming decisions:

1. Downscaled climate information services for better farm decisions: CBOs serve as the dissemination platform to reach farmers with weather information and provide appropriate agro-advisory services to farmers.
2. Resilient crop varieties to address food and nutrition challenges: CBOs organize farmer learning events to showcase new farm practices and value addition options. For example, these events promote intercrop innovations based on ICRISAT and KARLO research.
3. Soil and water management practices: CBOs partner with the Makueni Country government to facilitate increased investments in water harvesting, with the County enacting by-laws for increased water use efficiency.

These examples show how partnerships with CBOs make a difference in local climate adaptation practices. The increasing number of members and the changes in members'



S. Kilungu (CCAFS)

Farmers from Wote, Eastern Kenya attend a field day. The Community-Based Organizations exchange knowledge with local communities to showcase new practices and share climate change adaptation and mitigation initiatives with farmers.

farming practices prove the success of the CBOs. By August 2016 (two and a half years after they were formed), CBO membership increased from 140 to 620 households, out of which 70% are women. And by end of 2015, about 85% of the households had introduced one or two new crops or varieties up from 4% in 2012. CCAFS will continue partnering with like-minded organizations to avail and promote evidence-based solutions for climate change adaptation and mitigation.

Read more:

Info note: Building adaptive capacity and improving food security in semi-arid Eastern Kenya <http://bit.ly/2mdAF53>

Blog: How community-based organisations promote climate-smart practices in Kenyan drylands <http://bit.ly/2qoiGLf>

Blog: Learning from adaptation experiences of local communities in Makueni, Kenya <http://bit.ly/2rE5qXd>

Lili Szilagyi is Communications Consultant for the CCAFS Coordinating Unit and East Africa.

Partnering with national meteorological services to support farmers in Africa

On World Meteorology Day, we highlight how CCAFS and partners are supporting national meteorological services in African countries to provide actionable local climate information to farmers.

By James Hansen, Alison Rose and Dannie Dinh

The important contributions of meteorology to public safety and well-being are well recognized. Farmers need information about the timing and duration of rains to make important decisions on when to plant, what to plant, and how to plant. This is especially crucial in the face of climate variability, as changes in rainfall and temperature will have significant effects in Africa, where farmers there depend on rain-fed agriculture for their food and livelihoods.

National meteorological services (NMS) are the main source of information and expertise on weather and climate conditions and the custodians of historical data. Yet NMS are often the neglected and disadvantaged partners in the effort to help smallholder farmers adapt to a variable and changing climate. In the countries where the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) works, NMS are typically supportive of their farming populations but face serious resource constraints and competing demands from different sectors and government ministries.

Gaps in meteorological observation networks have been a major challenge to providing actionable climate information services, at a national scale. Across sub-Saharan Africa, the number of weather stations falls well below World Meteorological Organization (WMO) recommendations. Existing stations, which are concentrated in towns and on

highways, are also deteriorating. Crises such as the 1994 Rwanda genocide have decimated observing networks for extended periods. It would take decades for new stations to generate robust information about the local climate.

Several opportunities available to help smallholder farmers adapt to a variable and changing climate depend on climate information. These include weather index insurance, improved methods for communicating using seasonal forecasts, matching crops and farming practices to local climate variability and trends, and crop production forecasts. These interventions have been successful at a pilot scale in locations where long-term weather records are available. But challenges such as data gaps, the cost of processing and analyzing weather station records, and capacity constraints of NMS have made the prospects for scaling up these services unrealistic—until now.

Through the Enhancing National Climate Services (ENACTS) initiative, CCAFS works with the International Research Institute for Climate and Society (IRI) and other partners to support NMS in several African countries (Rwanda, Ethiopia, Tanzania, Ghana, Mali, Madagascar) and the AGRHYMET Regional Center in West Africa, to overcome data gaps and to provide high quality climate information. As a result, it is now feasible to provide climate information services that are actionable at the local scale of agricultural decision-making, at a national scale.

The ENACTS approach overcomes data gaps by blending NMS station data with satellite and other proxy data, to produce moderately high-resolution (roughly 4 km grid) historical gridded data (more than 30 years for rainfall, 50 years for temperature). The quality of these national data sets is substantially better than the best global data products. Access to information is improved through the development of online “Maproom” tools derived from the historic data sets, integrated into the NMS web pages. CCAFS is working with partners to expand the usefulness of ENACTS for agriculture, including reconstructing historic data on a daily time step, and expanding the suite of Maproom products to include new historical information products for agriculture and downscaled seasonal forecasts in a form that supports agricultural decision-making.

In Mali, for example, the Joint Agro-Meteorological Services Incubator (JAMSI) is a partnership that aims to build the capacity of Mali’s national meteorological agencies and other intermediaries in interpreting, communicating and activating the use of seasonal climate information for seasonal agricultural decision making. The launch of the ENACTS initiative in Mali compliments this partnership, especially in providing capacity training and easing the implementation of the Participatory Integrated Climate Services for Agriculture (PICSA) approach developed by the University of Reading. The merged climate data and products generated through ENACTS are freely accessible via Mali Meteo’s “DATATHÈQUE”. One year after its launch on World Meteorological Day in 2016, the Rwanda Climate Services for Agriculture project, supported by the U.S. Agency for International Development (USAID), provides a good example of how a NMS (Meteo-Rwanda) can work with agricultural institutions to provide actionable climate services. With CCAFS and IRI support, Meteo-Rwanda is developing a rich set of online Maproom products. The project is training agricultural extension staff and volunteer farmer promoters to use the PICSA approach to deliver relevant climate information to rural communities to help farmers make informed decisions.

In the first season of the four-year project, trained intermediaries from four pilot districts trained 2559 farmers (48% female) in the PICSA process, who in turn shared the information with an estimated 30,000 farmers. In the coming months, ENACTS and PICSA will be integrated, as trained intermediaries will access the graphical climate information that they bring to farming communities through Meteo-Rwanda’s Agriculture and Food Security Maprooms. Through the use of gridded data and online Maprooms, training personnel within the country’s innovative agricultural



A. Nyandwi/MINA GRI Rwanda (CIAT)

Farmers from Kayonza District, Rwanda review the training materials on climate forecast during a field visit as part of the Building Climate Services Capacity in Rwanda project.

extension system, and attention to institutional capacity and governance, the project aims to benefit nearly one million farmers by 2019, and transform Rwanda’s farming population and national economy through climate services and improved climate risk management.

Read more:

- Blog: Reaching a million farmers in Rwanda with useful climate services <http://bit.ly/2qkwaA3>
- Blog: Local beats global when it comes to national climate services in Rwanda <http://bit.ly/2r1mGVO>
- Blog: Quality climate data, the foundation for tomorrow’s climate services <http://bit.ly/2qoaVVj>
- Blog: Coordinating climate services with key institutions in Africa <http://bit.ly/2qo9dn8>
- Project page: Getting participatory agriculture climate services out to farmers
- Project page: Building climate services capacity in Rwanda <http://bit.ly/2qTpWSt>
- Project page: Climate services for Africa <http://bit.ly/2qgA9d8>

James Hansen is the Senior Research Scientist and CCAFS Flagship 2 Leader: Climate Information Services and Climate-Informed Safety Nets based at the International Research Institute for Climate and Society (IRI).

Alison Rose is the Science Officer for CCAFS Flagship 2: Climate Information Services and Climate-Informed Safety Nets based at the International Research Institute for Climate and Society (IRI).

Dannie Dinh is the Communications Officer for CCAFS Flagship on Climate Information Services and Climate-Informed Safety Nets based at the International Research Institute for Climate and Society (IRI).

Delivering targeted climate information services and products for farmers in Rwanda

Following trainings on climate information, smallholder farmers in Rwanda are turning to locally-tailored climate forecast to help them make decisions.

By Desire Kagabo, Gloriose Nsengiyumva, Florentine Mukarubayiza, Catherine Mungai and Dannie Dinh

Now we are real farmers!" say smallholder farmers in Rwanda.

Through the Participatory Integrated Climate Services for Agriculture (PICSA) approach developed by the University of Reading, trained farmers are able to use climate information services to make decisions about when to plant, which crops to plant and which inputs to use—and they are doing so at an increasing rate. Indeed, farmers are relying on seasonal and short term forecast information to update their farming calendars. Farmers acknowledge that some of the losses incurred in the past could be attributed to poor access to climate information services. The PICSA approach builds on the existing farmer-to-farmer extension service model locally known by its Kinyarwanda name as "Twigire Muhinzi."

During the first year of the Rwanda Climate Services for Agriculture project, funded by the United States Agency for International Development (USAID) and implemented by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), the PICSA approach has been implemented in four districts (Burera, Ngorero, Nyanza and Kayonza). Led by experts from the University of Reading, this process involved an initial 'expert trainers' workshop held in June 2016, where 31 senior staff from the Rwanda Meteorological Agency (Meteo Rwanda), Rwanda Agriculture

Board (RAB), the International Center for Tropical Agriculture (CIAT) and a number of non-governmental organizations (NGOs) were trained in the PICSA approach. The training yielded a core team of PICSA trainers who will continue to train other stakeholders in the PICSA approach during the four-year period of the project and beyond. This initial training was followed by two parallel sessions covering the project's four implementation districts. During these sessions, CIAT staff and 'expert trainers' trained 48 farmer promoters in the PICSA approach. Farmer promoters in turn rolled out the PICSA training with 2,631 farmers in the four districts. Of these farmers, 1,254 (48%) were women.

The information provided within the project is locality specific and tailored to farmers' needs and written in the local language to enhance farmers' understanding. The information includes parameters such as the start and end of the rains, length of the growing season, total seasonal rainfall amount, longest dry spell within a cropping season, and short-term and long-term forecast. The farmer promoters were trained in advance and given printed copies of the information to be shared with farmers. Given the various levels of training from expert trainers to farmer promoters then to farmers, copies of the climate information products and training materials were distributed to all farmers to avoid distortion of information.



G.Nsengiyumva (CCAFS)

Through PICSA, farmers are using climate information services to make decisions. The approach builds on the existing farmer-to-farmer extension service model.

Following the trainings, farmers can now read, understand, and correctly interpret graphs or tables of historical climatic parameters of their villages. Farmers also understand that seasons vary annually, requiring different response measures. “Farmers are very enthusiastic to attend trainings because they are getting the information that can help them find solutions to their crop losses related to extreme weather events,” explained J.D’Amour Nzabandeba, a farmer promoter from Ngororero district, during a monitoring and evaluation visit. Farmers commended the effective communication on climate information services to farmers through PICSA and reinstated that this will positively impact future farmers’ actions.

Concurrently, and also through the Rwanda Climate Services for Agriculture project, Meteo Rwanda is increasing its capacity to provide climate information services as well as develop tools tailored to farmers’ needs, including the downscaled, gridded historical climatic data and downscaled climatology forecast. Forecast information and climate

tools are available online in the Meteo Rwanda Maproom developed by the International Research Institute for Climate and Society (IRI).

Read more:

Blog: Prototype tool can help maintain farmers’ involvement in index insurance projects <http://bit.ly/2qk6qvP>

Blog: Establishing the foundation for climate services in Rwanda <http://bit.ly/2rILSr1>

Blog: Collecting farmers’ feedback on climate information services in Rwanda <http://bit.ly/2qoo6po>

Blog: Building capacity of intermediaries to avail climate services to farmers <http://bit.ly/2qogmDT>

Project factsheet: Rwanda Climate Services for Agriculture <http://bit.ly/2msT1PC>

Field Manual: Participatory Integrated Climate Services for Agriculture (PICSA) <http://bit.ly/2qobBu3>

Desire M. Kagabo, Gloriose Nsengiyumva and Yvonne Uwase are based at the International Center for Tropical Agriculture (CIAT) in Kigali, Rwanda. This blog story was reviewed and edited by Catherine Mungai and Dannie Dinh from CCAFS.

Sipping coffee in a shady garden: coping with increasing temperatures in coffee production systems

New online database tool provides advice on best trees to use for shade-grown coffee based on local knowledge and taking into consideration the farmers needs for ecosystem services

By Onno Giller

As we arrived at our destination, a coffee farm in Uganda, we climbed out of the car and the heat was overwhelming. Even the coffee farmer who greeted us, said “it is like stepping into an oven!”. Such high heat is detrimental to the Arabica coffee he is growing because it is better suited to cooler climes. Research has shown that a way of controlling the heat is to plant shade trees within the coffee garden. Although agroforestry has broadly been accepted by the coffee sector as a sustainable production system, the questions often arises on which tree or groups of trees is suited for which context. The International Institute for Tropical Agriculture (IITA) and partners in Uganda and Ghana have developed a Shade Tree Advice Tool that can help advise farmers on which trees to plant that fit their specific needs.

The changing climate is already impacting coffee production globally, and the predicted increase in temperature and increasingly erratic rainfall patterns are projected to change the suitable areas for coffee globally. The planting of shade trees can help control the microclimate in a coffee garden while at the same time providing a variety of other ecosystems services, such as firewood, timber, and food products.

Although shade trees do sound like an ideal solution, there are also challenges that arise from planting them. One such

challenge is that some shade trees increase the incidences of pests and diseases in certain conditions. Choosing which shade trees to grow is thus not as simple as it seems. The considerations that influence the choice of shade trees involve both the other environmental services the shade tree needs to provide, and whether or not that specific species will not cause more harm than good. The Shade Tree Advice tool consolidates both scientific and farmer knowledge to help farmers identify trees that fit closely to their specific needs and to help them choose which trees to plant.

The farmer quoted above lives and farms on the lower reaches of Mt. Elgon in Eastern Uganda, where the effects of increasing temperature are worse than higher up the mountain. The Greater Mbale District, which encompasses a large part of Mt. Elgon, was the site of the pilot study that developed the first prototype of the Shade Tree Advice tool. The first step in building a database of shade trees in the region was to do an on-farm inventory of the shade trees present on 50 farms in the low, middle and high altitude zones, respectively. The second step was to survey 100 farms in each altitude, in which farmers first ranked various tree-based environmental services by preference, and then ranked shade trees in their ability to provide these environmental services. As such, a database is built based on local use and knowledge of shade trees, which can give advice to farmers at specific altitudes and to their own specific needs.



O. Giller (IITA)

Robusta coffee being intercropped with banana in Mukono, Central Uganda

A prototype of the Shade Tree Advice Tool has been built and is currently in website form. The database is uploaded to the tool, and the tool gives the user the ability to access the information in an easy-to-use way, without having to scroll through the raw data. The user, either the farmer himself or an intermediary such as an agricultural extension agent, can choose the country, region, crop and subzone that fits their criteria. Then they have the ability to choose environmental services they are interested in, as well as how important each environmental service is they have chosen. The tool then displays the shade trees that best fit the criteria, and the user has the option of learning more about the best shade trees that are being advised.

As the tool is only a prototype at this stage, work is being done to refine it, and an offline app is also envisioned to make it more readily accessible to farmers and remotely based extension agents. The tool is also not specific to just Arabica or even just coffee. The process was also completed for Robusta coffee in the Greater Luweero District of Uganda, where different rainfall gradients were used. Outside of

Uganda, studies were done on Arabica coffee along altitudinal zones in China, and among cocoa farms along rainfall gradients in Ghana.

Although shade trees are a key practice in adapting to climate change in select perennial agroforestry systems, there has so far not been an easy way to give advice on the best trees to plant. This tool fills a gap, and with continued work to build the database, it can help advise farmers on how to choose appropriate shade trees around the globe.

Read more:

Download the accompanying CCAFS Info Note on the Shade Tree Advice tool for more information. <http://bit.ly/2r1eMM4>

If you are interested to learn more about the methodology or have any further questions, please contact Laurence Jassogne (L.Jassogne@cgiar.org).

Onno Giller is an Environmental Anthropologist and Scaling and Innovations Specialist at IITA and a PhD candidate at Wageningen University

Out & About



1. Stakeholders involved in implementing the Rwanda Climate services for agriculture project in Kigali, Rwanda.
2. Post - COP 22 meeting in Nairobi, Kenya
3. Training of Sector Agronomists, Social Economic Development Officers (SEDOs), and Farmer Promoters (FPs) on the use of the Participatory Integrated Climate Services for Agriculture (PICSA) approach
4. A group of participants discusses gender responsive budgeting during a workshop in Uganda, Feb. 2017.

In our diary

May Africa Regional Forum on Sustainable Development

17
2017

May Webinar: "CSA-Plan": Strategies to put CSA into practice
Venue: Online

24
2017

June Webinar: Farm household characterization to inform climate smart agricultural interventions
Venue: Online

21
2017

June The 11th International Conference on Community-Based Adaptation (CBA11)

23
2017



CCAFS EA in the media

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From one organic to another municipality

OF THE FALLET ON APRIL 15, 2017 CAMPS NEWS

By Ebbe Schiøler

Ebbe Schiøler from Camps have been in Kenya. Here he experienced how ecology can be practiced in very different terms than those prevailing in Camps Municipality. That he talks about in this article.

SECTIONER ECONOMY AND BUSINESS ENVIRONMENT AND CLIMATE ART AND CULTURE

1728 | 04/04/2017 | KENYA | ENVIRONMENT AND CLIMATE: DMNEKRD: domestic animals / methane gases / eco tour

Ecological Tour in Kenya II: It's been goat in the

Animals are a useful thing for small farmers in Kenya, although there is a climate impact. But it is now so bad? And can it be made easier? Here the second part of our series on agriculture, environment and climate in Kenya.

Photo: Ebbe Schiøler

f / Ebbe Schiøler

Job exchange

- International Media Support (IMS) is seeking an experienced Program Development Advisor
- Senior Advisor (NS) to the Danish Energy Agency's Energy Partnership Program in Vietnam
- Save the Children campaign section seeks Online marketing specialist FUNDRAISING
- HUMANITARIAN ACTION - Save the Children Denmark is looking for a Humanitarian Surge Team
- Save the Children campaign section looking ONLINE MARKETING SPECIALIST FUNDRAISING
- Graphic employee / student assistant for CØstas
- Wage subsidies Position at Family Planning
- DonChurchAid (DCA) is looking for a Business & Human Rights Project Officer
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From one organic to another municipality (viborher) <http://bit.ly/2sB0Oza>

Ecological Tour in Kenya II: It's been goat in the (globalnyt) <http://bit.ly/2sVRjgE>

Further Reading

CCAFS Latest Publications

Book chapter: Examples of good practices on climate change adaptation from Nyando shared to foster learning <http://bit.ly/2rYXf4e>

Info Note: Building adaptive capacity and improving food security in semi-arid Eastern Kenya <http://bit.ly/2rDbHCw>

Info Note: Youth Decision Making in Agricultural Climate Change Adaptations: Research findings from East Africa <http://bit.ly/2rUdOic>

Report: Participatory Integrated Climate Services for Agriculture (PICSA): Planning and Review Meetings for Kondoa and Kileteto Districts, Tanzania <http://bit.ly/2qT4q0o>

Report: Participatory Integrated Climate Services for Agriculture (PICSA) Intermediary Training, Zomba District, Malawi <http://bit.ly/2qnlTuw>

Working paper: Climate Services for Agriculture in Rwanda Baseline Survey Report <http://bit.ly/2rl4nvz>

Working paper: Investing in on-farm and post-harvest resilience to climate change in smallholder value chains: Lessons from Rwanda <http://bit.ly/2qg2PTq>

Resources and Tools

CCAFS website and blog updated daily with news on policy and practice, research, events and downloadable publications from the CGIAR and partners.

Website: <http://bit.ly/1gX2uKi> Blog: http://bit.ly/Blogs_EastAfrica

AgTrials Large public repository of agricultural trial data sets, with different crops, technologies and climates. <http://bit.ly/AgTrials>

Food Security CASE maps Map-based projections of crop area and yields, average calorie availability, and international trade flows across the world. <http://bit.ly/Casemaps>

MarkSim II Generator of future location-specific rainfall series, based on a choice of General Circulation Models. <http://bit.ly/2sk8Fo5>

GCM data portal Set of downscaled climate data sets. http://bit.ly/Climate_Data

Dataverse Public portal for full CCAFS data sets such as the baseline surveys from CCAFS East Africa sites that include information on farmers' current adaptive practices. <http://bit.ly/Baseline-Surveys>

Big Facts website Get all the links on climate change, agriculture and food security. <http://bit.ly/1gYWjWt>

Atlas of CCAFS sites Browse colourful maps of CCAFS research sites in three regions: East Africa, West Africa and South Asia. <http://bit.ly/1iSfwHd>

Core Sites in the CCAFS regions This portfolio includes brief descriptions of CCAFS core sites in East Africa, West Africa and South Asia, including coordinates of the sampling frames of the baseline surveys. <http://bit.ly/1dKwrfG>

Climate Analogues This is a tool that uses spatial and temporal variability in climate projections to identify and map sites with statistically similar climates across space and time. <http://bit.ly/1pzmVhl>

Climate and Agriculture Network for Africa: This web-based platform seeks to link scientists with policy makers to address climate change, agriculture and food security issues in Africa. <http://bit.ly/1BHmhG0>




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